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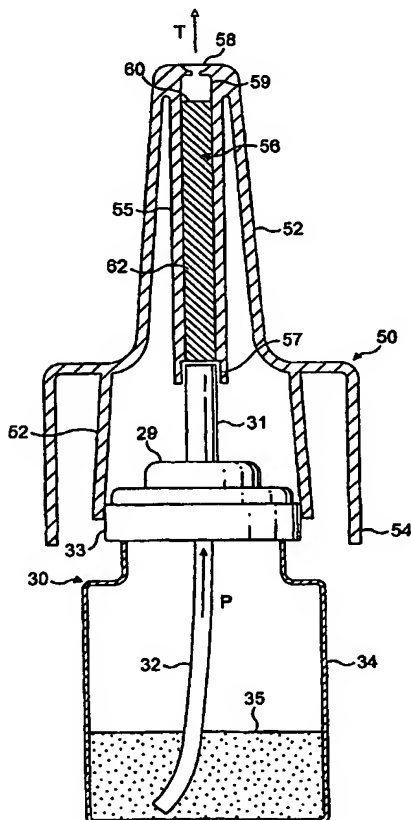
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[Continued on next page]

(54) Title: **NOZZLE FOR A NASAL INHALER**



(57) Abstract: There is provided a nasal dispensing nozzle for use with a fluid medicament discharge pump device having a discharge outlet for discharge of pumped fluid medicament. The nasal dispensing nozzle comprises a body defining a fluid flow channel; an inlet port defining an inlet to said channel, said inlet port shaped for receipt of said discharge outlet to enable delivery of said pumped fluid medicament to the channel; and an outlet port defining an outlet from said channel, said outlet port shaped for insertion into the nasal cavity of a user to enable delivery of the pumped fluid medicament thereto. A screw thread path is provided to the channel between the inlet and said outlet to impart angular momentum to the pumped fluid medicament.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B05B1/34

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 949 939 A (BROWN FRANK E) 13 April 1976 (1976-04-13)	1-14, 20-31
Y	column 2, line 1 - column 3, line 20; claim 5; figures 2,8	15-19
X	FR 1 340 235 A (ANCIENS ETABLISSEMENTS E ROBER) 18 October 1963 (1963-10-18) page 2; figure 1	1,3-15, 21-31
Y	US 2 435 605 A (ROWELL HERMAN L) 10 February 1948 (1948-02-10) claims 1,2; figures	15-19
A	DE 960 777 C (PUMPINDUSTRI AB) 28 March 1957 (1957-03-28) figures	13

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3949939	A	13-04-1976	AR 211701 A1 28-02-1978
			AU 502725 B2 09-08-1979
			AU 1241976 A 29-09-1977
			BE 839915 A1 23-09-1976
			BR 7601784 A 28-09-1976
			CA 1050501 A1 13-03-1979
			DE 2612471 A1 14-10-1976
			ES 446330 A1 16-06-1977
			FR 2305242 A1 22-10-1976
			GB 1487317 A 28-09-1977
			LU 74633 A1 01-09-1976
			NL 7603027 A 28-09-1976
			SE 7603623 A 27-09-1976
			ZA 7601802 A 30-03-1977
FR 1340235	A	18-10-1963	NONE
US 2435605	A	10-02-1948	NONE
DE 960777	C	28-03-1957	NONE